

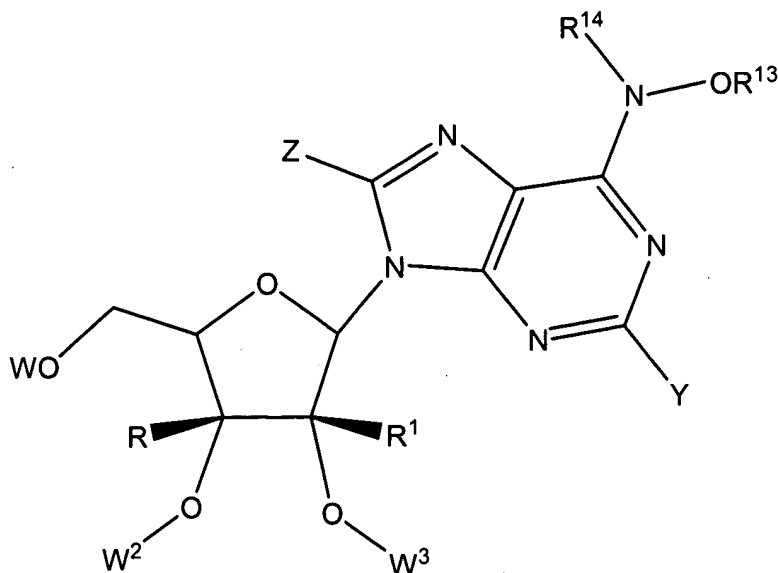
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-3 Canceled

4. (currently amended) A compound of Formula IB:



wherein

R and R¹ are independently selected from the group consisting of:

hydrogen,
alkyl,
substituted alkyl,
alkenyl,
substituted alkenyl,
alkynyl, and
substituted alkynyl;

R¹³ is selected from the group consisting of hydrogen, alkyl, and substituted alkyl;

R^{14} is selected from the group consisting of hydrogen, alkyl, and substituted alkyl;

Y is selected from the group consisting of:

hydrogen,

halo,

hydroxy,

alkylthioether, and

$-NR^3R^4$ where R^3 and R^4 are independently selected from the group consisting of

hydrogen, hydroxy, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl,

substituted alkynyl, alkoxy, substituted alkoxy, aryl, substituted aryl, heteroaryl,

substituted heteroaryl, ~~heterocycl~~ heterocyclyl, substituted ~~heterocycl~~ heterocyclyl

and where R^3 and R^4 are joined to form, together with the nitrogen atom bond thereto,

a ~~heterocycl~~ heterocyclyl group, provided that only one of R^3 and R^4 is hydroxy,

alkoxy, or substituted alkoxy;

Z is selected from the group consisting of:

hydrogen,

halo,

hydroxy,

alkyl,

substituted alkyl,

alkenyl,

substituted alkenyl,

alkynyl,

substituted alkynyl,

cyano,

carboxyl,

carboxyl ester,

acylamino,

1,3-oxazol-2-yl,

1,3-oxazol-5-yl,
1,3-thiazol-2-yl,
imidazol-2-yl,
2-oxo-[1,3]dithiol-4-yl,
furan-2-yl,
2H-[1,2,3]triazol-4-yl, and

—NR³R⁴ where R³ and R⁴ are independently selected from the group consisting of hydrogen, hydroxy, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, alkoxy, substituted alkoxy, aryl, substituted aryl, heteroaryl, substituted heteroaryl, ~~heterocyclyl~~ heterocyclyl, substituted ~~heterocyclyl~~ heterocyclyl and where R³ and R⁴ are joined to form, together with the nitrogen atom bond thereto, a ~~heterocyclyl~~ heterocyclyl group, provided that only one of R³ and R⁴ is hydroxy, alkoxy, or substituted alkoxy;

W, W², and W³ are independently selected from the group consisting of:

hydrogen,
a phosphate,
a phosphonate,
a monofluorophosphate acyl,
a sulfonate ester,
a lipid, an amino acid,
a carbohydrate,
a peptide, and
cholesterol;

and pharmaceutically acceptable prodrugs and salts thereof;

provided that the compound ~~if~~ of Formula IB is not

- a) 9-(β-D-ribofuranosyl)-6-hydroxylaminopurine;
- b) 9-(2'-C-methyl-α-D-ribofuranosyl)-6-hydroxylaminopurine;
- c) 9-(5'-O-monophosphate-β-D-ribofuranosyl)-6-hydroxylaminopurine; and or

d) 9-(5'-O-triphosphate- β -D-ribofuranosyl)-6-hydroxylaminopurine;

wherein

substituted alkyl refers to an alkyl group having from 1 to 3 selected from the group consisting of alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl;

alkoxy refers to alkyl-O-;

substituted alkoxy refers to (substituted alkyl)-O-;

acyl refers to a moiety selected from the group consisting of H-C(O)-, alkyl-C(O)-, substituted alkyl-C(O)-, alkenyl-C(O)-, substituted alkenyl-C(O)-, alkynyl-C(O)-, substituted alkynyl-C(O)-cycloalkyl-C(O)-, substituted cycloalkyl-C(O)-, aryl-C(O)-, substituted aryl-C(O)-, heteroaryl-C(O)-, substituted heteroaryl-C(O), heterocyclyl-C(O)-, and substituted heterocyclyl-C(O)-;

acylamino refers to -C(O)NRR, where each R is independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, substituted heterocyclyl and where each R is joined to form together with the nitrogen atom a heterocyclyl or substituted heterocyclyl ring;

acyloxy refers to a moiety selected from the group consisting of alkyl-C(O)O-, substituted alkyl-C(O)O-, alkenyl-C(O)O-, substituted alkenyl-C(O)O-, alkynyl-C(O)O-, substituted alkynyl-C(O)O-, aryl-C(O)O-, substituted aryl-C(O)O-, cycloalkyl-C(O)O-, substituted cycloalkyl-C(O)O-, heteroaryl-C(O)O-, substituted heteroaryl-C(O)O-, heterocyclyl-C(O)O-, and substituted heterocyclyl-C(O)O-;

substituted alkenyl refers to an alkenyl group having from 1 to 3 substituents selected from the group consisting of alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl,

substituted heteroaryl, heterocyclyl, and substituted heterocyclyl with the proviso that any hydroxyl substitution is not attached to unsaturated carbon atom;

substituted alkynyl refers to an alkynyl group having from 1 to 3 substituents selected from the group consisting of alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl;

amino refers to $-NH_2$;

substituted amino refers to $-NR'R''$ where R' and R'' are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, substituted heterocyclyl, or where R' and R'' are joined together with the nitrogen bound thereto to form a heterocyclyl or substituted heterocyclyl group provided that R' and R'' are both not hydrogen;

aminoacyl refers to a moiety selected from the group consisting of $-NRC(O)alkyl$, $-NRC(O)substituted\ alkyl$, $-NRC(O)cycloalkyl$, $-NRC(O)substituted\ cycloalkyl$, $-NRC(O)alkenyl$, $-NRC(O)substituted\ alkenyl$, $-NRC(O)alkynyl$, $-NRC(O)substituted\ alkynyl$, $-NRC(O)aryl$, $-NRC(O)substituted\ aryl$, $-NRC(O)heteroaryl$, $-NRC(O)substituted\ heteroaryl$, $-NRC(O)heterocyclyl$, and $-NRC(O)substituted\ heterocyclyl$ where R is hydrogen or alkyl;

aryl refers to a monovalent aromatic carbocyclic group of from 6 to 14 carbon atoms having a single ring or multiple condensed rings, which condensed rings may or may not be aromatic;

substituted aryl refers to an aryl group that is substituted with from 1 to 3 substituents selected from the group consisting of hydroxy, acyl, acylamino, acyloxy, alkyl, substituted alkyl, alkoxy, substituted alkoxy, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cycloalkoxy, substituted cycloalkoxy, carboxyl, carboxyl esters, cyano, thiol, thioalkyl, substituted thioalkyl, thioaryl, substituted thioaryl, thioheteroaryl, substituted thioheteroaryl,

thiocycloalkyl, substituted thiocycloalkyl, thioheterocyclyl, substituted thioheterocyclyl, cycloalkyl, substituted cycloalkyl, halo, nitro, heteroaryl, substituted heteroaryl, heterocyclyl, substituted heterocyclyl, heteroaryloxy, substituted heteroaryloxy, heterocyclyloxy, and substituted heterocyclyloxy;

aryloxy refers to aryl-O-;

substituted aryloxy refers to (substituted aryl)-O-;

carboxyl refers to -COOH or a salt thereof;

carboxyl ester refers to a moiety selected from the group consisting of -C(O)O-alkyl, -C(O)O-substituted alkyl, -C(O)Oaryl, and -C(O)O-substituted aryl;

cycloalkyl refers to a cyclic alkyl group of from 3 to 10 carbon atoms having single or multiple cyclic rings;

substituted cycloalkyl refers to a cycloalkyl group having from 1 to 5 substituents selected from the group consisting of oxo (=O), thioxo (=S), alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl;

cycloalkoxy refers to a -O-cycloalkyl group;

substituted cycloalkoxy refers to a -O-(substituted cycloalkyl) group;

halogen refers to fluoro, chloro, bromo and iodo;

heteroaryl refers to an aromatic group of from 1 to 10 carbon atoms and 1 to 4 heteroatoms selected from the group consisting of oxygen, nitrogen and sulfur within a single ring or multiple condensed rings;

substituted heteroaryl refers to a heteroaryl group substituted with from 1 to 3 substituents selected the group consisting of hydroxy, acyl, acylamino, acyloxy, alkyl, substituted alkyl, alkoxy, substituted alkoxy, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cycloalkoxy, substituted cycloalkoxy, carboxyl, carboxyl esters, cyano, thiol, thioalkyl, substituted thioalkyl, thioaryl, substituted thioaryl, thioheteroaryl, substituted thioheteroaryl,

thiocycloalkyl, substituted thiocycloalkyl, thioheterocyclyl, substituted thioheterocyclyl, cycloalkyl, substituted cycloalkyl, halo, nitro, heteroaryl, substituted heteroaryl, heterocyclyl, substituted heterocyclyl, heteroaryloxy, substituted heteroaryloxy, heterocycliloxy, and substituted heterocycliloxy;

heteroaryloxy refers to –O-heteroaryl;

substituted heteroaryloxy refers to –O–(substituted heteroaryl);

heterocyclyl refers to a saturated or unsaturated group having a single ring or multiple condensed rings, from 1 to 10 carbon atoms and from 1 to 4 hetero atoms selected from the group consisting of nitrogen, sulfur or oxygen within the ring wherein, in fused ring systems, one or more of the rings can be cycloalkyl, aryl or heteroaryl provided that the point of attachment is through the heterocyclyl ring;

substituted heterocyclyl refers to a heterocycle group substituted with from 1 to 3 of the same substituents selected from the group consisting of oxo (=O), thioxo (=S), alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl;

heterocycliloxy refers to –O-heterocyclyl;

substituted heterocycliloxy refers to –O–(substituted heterocyclyl);

phosphate refers to a moiety selected from the group consisting of –OP(O)(OH)₂ (monophosphate), –OP(O)(OH)OP(O)(OH)₂ (diphosphate) and –OP(O)(OH)OP(O)(OH)OP(O)(OH)₂ (triphosphate) or salts thereof including partial salts thereof;

phosphonate refers to a moiety selected from the group consisting of –OP(O)(R)(OH), –OP(O)(OR), and salts thereof including partial salts thereof, wherein each R is independently selected from hydrogen, alkyl, substituted alkyl, carboxylic acid, and carboxyl ester;

sulfonate ester refers to $-\text{SO}_2\text{OR}$ where R is selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclyl and substituted heterocyclyl;

thiol refers to $-\text{SH}$;

thioalkyl refers to $-\text{S-alkyl}$;

substituted thioalkyl refers to $-\text{S-}(\text{substituted alkyl})$;

thiocycloalkyl refers to $-\text{S-cycloalkyl}$;

substituted thiocycloalkyl refers to $-\text{S-}(\text{substituted cycloalkyl})$;

thioaryl refers to $-\text{S-aryl}$;

substituted thioaryl refers to $-\text{S-}(\text{substituted aryl})$;

thioheteroaryl refers to $-\text{S-heteroaryl}$;

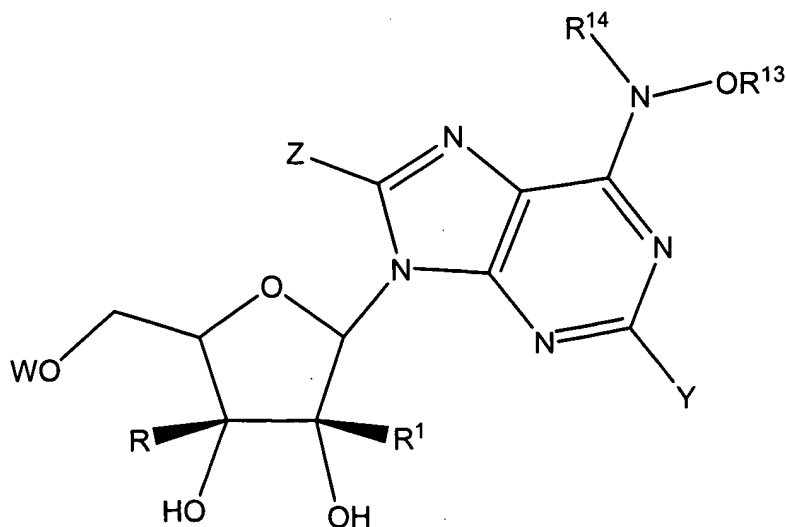
substituted thioheteroaryl refers to $-\text{S-}(\text{substituted heteroaryl})$;

thioheterocyclyl refers to $-\text{S-heterocyclyl}$; and

substituted thioheterocyclyl refers to $-\text{S-}(\text{substituted heterocyclyl})$.

5. (original) The compound according to claim 4, wherein at least one of R and R¹ is other than hydrogen.

6. (currently amended) A compound of Formula IC:



wherein

R and R¹ are independently selected from the group consisting of:

hydrogen,
alkyl,
substituted alkyl,
alkenyl,
substituted alkenyl,
alkynyl, and
substituted alkynyl,

provided that R and R¹ are not both hydrogen;

R¹³ is selected from the group consisting of hydrogen, alkyl, and substituted alkyl;

R¹⁴ is selected from the group consisting of hydrogen, alkyl, and substituted alkyl;

Y is selected from the group consisting of:

hydrogen,
halo,
hydroxy,
alkylthioether, and

—NR³R⁴ where R³ and R⁴ are independently selected from the group consisting of

hydrogen, hydroxy, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl,
substituted alkynyl, alkoxy, substituted alkoxy, aryl, substituted aryl, heteroaryl,
substituted heteroaryl, ~~heteroeyelie~~ heterocyclyl, substituted ~~heteroeyelie~~ heterocyclyl
and where R³ and R⁴ are joined to form, together with the nitrogen atom bond thereto,
a ~~heteroeyelie~~ heterocyclyl group, provided that only one of R³ and R⁴ is hydroxy,
alkoxy, or substituted alkoxy;

Z is selected from the group consisting of:

hydrogen,
halo,
hydroxy,

alkyl, and

—NR³R⁴ where R³ and R⁴ are independently selected from the group consisting of hydrogen, hydroxy, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, alkoxy, substituted alkoxy, aryl, substituted aryl, heteroaryl, substituted heteroaryl, ~~heterocyclic~~ heterocyclyl, substituted ~~heterocyclic~~ heterocyclyl and where R³ and R⁴ are joined to form, together with the nitrogen atom bond thereto, a ~~heterocyclic~~ heterocyclyl group, provided that only one of R³ and R⁴ is hydroxy, alkoxy, or substituted alkoxy;

W is selected from the group consisting of:

hydrogen,
a phosphate,
a phosphonate,
acyl,
a sulfonate ester,
a lipid,
an amino acid,
a carbohydrate,
a peptide, and
cholesterol; and

pharmaceutically acceptable salts thereof;

provided that the compound of Formula IC is not 9-(2'-C-methyl- α -D-ribofuranosyl)-6-(—S or R Inactive-)-hydroxylaminopurine;

wherein

substituted alkyl refers to an alkyl group having from 1 to 3 selected from the group consisting of alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl;

alkoxy refers to alkyl-O-;

substituted alkoxy refers to (substituted alkyl)-O-;

acyl refers to a moiety selected from the group consisting of H-C(O)-, alkyl-C(O)-, substituted alkyl-C(O)-, alkenyl-C(O)-, substituted alkenyl-C(O)-, alkynyl-C(O)-, substituted alkynyl-C(O)-, cycloalkyl-C(O)-, substituted cycloalkyl-C(O)-, aryl-C(O)-, substituted aryl-C(O)-, heteroaryl-C(O)-, substituted heteroaryl-C(O)-, heterocyclyl-C(O)-, and substituted heterocyclyl-C(O)-;

acylamino refers to -C(O)NRR, where each R is independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, substituted heterocyclyl and where each R is joined to form together with the nitrogen atom a heterocyclyl or substituted heterocyclyl ring;

acyloxy refers to a moiety selected from the group consisting of alkyl-C(O)O-, substituted alkyl-C(O)O-, alkenyl-C(O)O-, substituted alkenyl-C(O)O-, alkynyl-C(O)O-, substituted alkynyl-C(O)O-, aryl-C(O)O-, substituted aryl-C(O)O-, cycloalkyl-C(O)O-, substituted cycloalkyl-C(O)O-, heteroaryl-C(O)O-, substituted heteroaryl-C(O)O-, heterocyclyl-C(O)O-, and substituted heterocyclyl-C(O)O-;

substituted alkenyl refers to an alkenyl group having from 1 to 3 substituents selected from the group consisting of alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl with the proviso that any hydroxyl substitution is not attached to unsaturated carbon atom;

substituted alkynyl refers to an alkynyl group having from 1 to 3 substituents selected from the group consisting of alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl;

amino refers to $-NH_2$.

substituted amino refers to $-NR'R''$ where R' and R'' are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, substituted heterocyclyl, or where R' and R'' are joined, together with the nitrogen bound thereto to form a heterocyclyl or substituted heterocyclyl group provided that R' and R'' are both not hydrogen;

aminoacyl refers to a moiety selected from the group consisting of $-NRC(O)alkyl$, $-NRC(O)substituted\ alkyl$, $-NRC(O)cycloalkyl$, $-NRC(O)substituted\ cycloalkyl$, $-NRC(O)alkenyl$, $-NRC(O)substituted\ alkenyl$, $-NRC(O)alkynyl$, $-NRC(O)substituted\ alkynyl$, $-NRC(O)aryl$, $-NRC(O)substituted\ aryl$, $-NRC(O)heteroaryl$, $-NRC(O)substituted\ heteroaryl$, $-NRC(O)heterocyclyl$, and $-NRC(O)substituted\ heterocyclyl$ where R is hydrogen or alkyl;

aryl refers to a monovalent aromatic carbocyclic group of from 6 to 14 carbon atoms having a single ring or multiple condensed rings, which condensed rings may or may not be aromatic;

substituted aryl refers to an aryl group that is substituted with from 1 to 3 substituents selected from the group consisting of hydroxy, acyl, acylamino, acyloxy, alkyl, substituted alkyl, alkoxy, substituted alkoxy, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cycloalkoxy, substituted cycloalkoxy, carboxyl, carboxyl esters, cyano, thiol, thioalkyl, substituted thioalkyl, thioaryl, substituted thioaryl, thioheteroaryl, substituted thioheteroaryl, thiocycloalkyl, substituted thiocycloalkyl, thioheterocyclyl, substituted thioheterocyclyl, cycloalkyl, substituted cycloalkyl, halo, nitro, heteroaryl, substituted heteroaryl, heterocyclyl, substituted heterocyclyl, heteroaryloxy, substituted heteroaryloxy, heterocyclyloxy, and substituted heterocyclyloxy;

aryloxy refers to $aryl-O-$;

substituted aryloxy refers to $(substituted\ aryl)-O-$;

carboxyl refers to $-COOH$ or a salt thereof;

carboxyl ester refers to a moiety selected from the group consisting of –C(O)O-alkyl, –C(O)O-substituted alkyl, –C(O)Oaryl, and –C(O)O-substituted aryl;

cycloalkyl refers to a cyclic alkyl group of from 3 to 10 carbon atoms having single or multiple cyclic rings;

substituted cycloalkyl refers to a cycloalkyl group having from 1 to 5 substituents selected from the group consisting of oxo (=O), thioxo (=S), alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl;

cycloalkoxy refers to a –O–cycloalkyl group;

substituted cycloalkoxy refers to a –O–(substituted cycloalkyl) group;

halogen refers to fluoro, chloro, bromo and iodo;

heteroaryl refers to an aromatic group of from 1 to 10 carbon atoms and 1 to 4 heteroatoms selected from the group consisting of oxygen, nitrogen and sulfur within a single ring or multiple condensed rings;

substituted heteroaryl refers to a heteroaryl group substituted with from 1 to 3 substituents selected the group consisting of hydroxy, acyl, acylamino, acyloxy, alkyl, substituted alkyl, alkoxy, substituted alkoxy, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cycloalkoxy, substituted cycloalkoxy, carboxyl, carboxyl esters, cyano, thiol, thioalkyl, substituted thioalkyl, thioaryl, substituted thioaryl, thioheteroaryl, substituted thioheteroaryl, thiocycloalkyl, substituted thiocycloalkyl, thioheterocyclyl, substituted thioheterocyclyl, cycloalkyl, substituted cycloalkyl, halo, nitro, heteroaryl, substituted heteroaryl, heterocyclyl, substituted heterocyclyl, heteroaryloxy, substituted heteroaryloxy, heterocyclyloxy, and substituted heterocyclyloxy;

heteroaryloxy refers to –O–heteroaryl;

substituted heteroaryloxy refers to –O–(substituted heteroaryl);

heterocyclyl refers to a saturated or unsaturated group having a single ring or multiple condensed rings, from 1 to 10 carbon atoms and from 1 to 4 hetero atoms selected from the group consisting of nitrogen, sulfur or oxygen within the ring wherein, in fused ring systems, one or more of the rings can be cycloalkyl, aryl or heteroaryl provided that the point of attachment is through the heterocyclyl ring;

substituted heterocyclyl refers to a heterocycle group substituted with from 1 to 3 of the same substituents selected from the group consisting of oxo ($=O$), thioxo ($=S$), alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl;

heterocyclyloxy refers to $-O$ -heterocyclyl;

substituted heterocyclyloxy refers to $-O$ -(substituted heterocyclyl);

phosphate refers to a moiety selected from the group consisting of $-OP(O)(OH)_2$ (monophosphate), $-OP(O)(OH)OP(O)(OH)_2$ (diphosphate) and $-OP(O)(OH)OP(O)(OH)OP(O)(OH)_2$ (triphosphate) or salts thereof including partial salts thereof;

phosphonate refers to a moiety selected from the group consisting of $-OP(O)(R)(OH)$, $-OP(O)(OR)$, and salts thereof including partial salts thereof, wherein each R is independently selected from hydrogen, alkyl, substituted alkyl, carboxylic acid, and carboxyl ester;

sulfonate ester refers to $-SO_2OR$ where R is selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclyl and substituted heterocyclyl;

thiol refers to $-SH$;

thioalkyl refers to $-S$ -alkyl;

substituted thioalkyl refers to $-S$ -(substituted alkyl);

thiocycloalkyl refers to $-S$ -cycloalkyl;

substituted thiocycloalkyl refers to –S–(substituted cycloalkyl);

thioaryl refers to –S–aryl;

substituted thioaryl refers to –S–(substituted aryl);

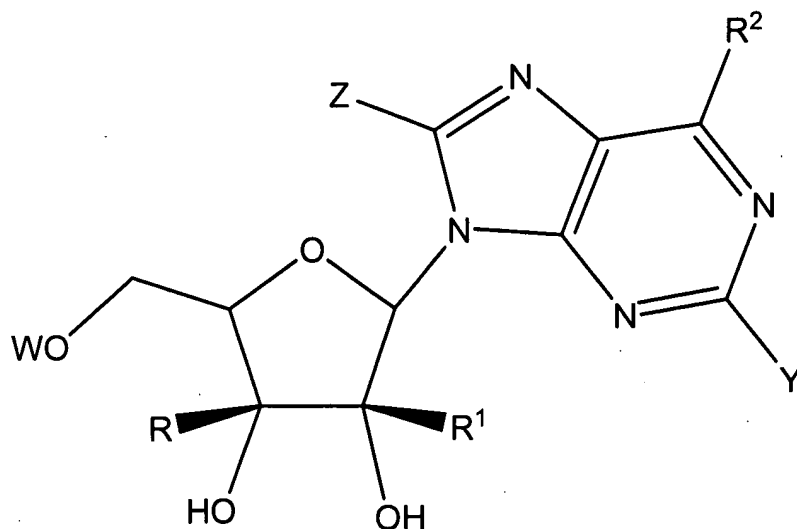
thioheteroaryl refers to –S–heteroaryl;

substituted thioheteroaryl refers to –S–(substituted heteroaryl);

thioheterocyclyl refers to –S–heterocyclyl; and

substituted thioheterocyclyl refers to –S–(substituted heterocyclyl).

7. (currently amended) A compound of Formula IC-A:



wherein

R and R¹ are independently selected from the group consisting of:

hydrogen,

alkyl,

substituted alkyl,

alkenyl,

substituted alkenyl,

alkynyl, and

substituted alkynyl,

provided that R and R¹ are not both hydrogen;

R^2 is $-NR^3R^4$ where R^3 is hydrogen and R^4 is hydroxy or alkoxy;

Y is selected from the group consisting of:

hydrogen,

halo,

hydroxy,

alkylthioether, and

$-NR^3R^4$ where R^3 and R^4 are independently selected from the group consisting of

hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, alkoxy, aryl, substituted aryl, heteroaryl, substituted heteroaryl, ~~heterocyclic~~

heterocyclyl, substituted ~~heterocyclic~~ heterocyclyl and where R^3 and R^4 is joined to

form, together with the nitrogen atom bond thereto, a ~~heterocyclic~~ heterocyclyl group;

Z is selected from the group consisting of:

hydrogen,

halo,

hydroxy, and

$-NR^3R^4$ where R^3 and R^4 are independently selected from the group consisting of

hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, alkoxy, aryl, substituted aryl, heteroaryl, substituted heteroaryl, ~~heterocyclic~~

heterocyclyl, substituted ~~heterocyclic~~ heterocyclyl and where R^3 and R^4 are joined to

form, together with the nitrogen atom bond thereto, a ~~heterocyclic~~ heterocyclyl group;

W is selected from the group consisting of:

hydrogen,

a phosphate,

acyl,

a sulfonate ester,

a lipid,

an amino acid,

a carbohydrate,

a peptide, and
cholesterol; and
pharmaceutically acceptable salts thereof;
provided that the compound if of Formula IC-A is not 9-(2'-C-methyl- α -D-ribofuranosyl)-6-hydroxylaminopurine;

wherein

substituted alkyl refers to an alkyl group having from 1 to 3 selected from the group consisting of
alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl,
aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl,
carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl,
heterocyclyl, and substituted heterocyclyl;

alkoxy refers to alkyl-O-;

substituted alkoxy refers to (substituted alkyl)-O-;

acyl refers to a moiety selected from the group consisting of H-C(O)-, alkyl-C(O)-, substituted
alkyl-C(O)-, alkenyl-C(O)-, substituted alkenyl-C(O)-, alkynyl-C(O)-, substituted alkynyl-
C(O)-cycloalkyl-C(O)-, substituted cycloalkyl-C(O)-, aryl-C(O)-, substituted aryl-C(O)-,
heteroaryl-C(O)-, substituted heteroaryl-C(O), heterocyclyl-C(O)-, and substituted
heterocyclyl-C(O)-;

acylamino refers to -C(O)NRR, where each R is independently selected from the group
consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl,
substituted alkynyl, aryl, substituted aryl, cycloalkyl, substituted cycloalkyl, heteroaryl,
substituted heteroaryl, heterocyclyl, substituted heterocyclyl and where each R is joined to
form together with the nitrogen atom a heterocyclyl or substituted heterocyclyl ring;

acyloxy refers to a moiety selected from the group consisting of alkyl-C(O)O-, substituted alkyl-
C(O)O-, alkenyl-C(O)O-, substituted alkenyl-C(O)O-, alkynyl-C(O)O-, substituted alkynyl-
C(O)O-, aryl-C(O)O-, substituted aryl-C(O)O-, cycloalkyl-C(O)O-, substituted cycloalkyl-
C(O)O-, heteroaryl-C(O)O-, substituted heteroaryl-C(O)O-, heterocyclyl-C(O)O-, and
substituted heterocyclyl-C(O)O-;

substituted alkenyl refers to an alkenyl group having from 1 to 3 substituents selected from the group consisting of alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl with the proviso that any hydroxyl substitution is not attached to unsaturated carbon atom;

substituted alkynyl refers to an alkynyl group having from 1 to 3 substituents selected from the group consisting of alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl;

amino refers to $-NH_2$;

substituted amino refers to $-NR'R''$ where R' and R'' are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, substituted heterocyclyl, or where R' and R'' are joined, together with the nitrogen bound thereto to form a heterocyclyl or substituted heterocyclyl group provided that R' and R'' are both not hydrogen;

aminoacyl refers to a moiety selected from the group consisting of $-NRC(O)alkyl$, $-NRC(O)substituted alkyl$, $-NRC(O)cycloalkyl$, $-NRC(O)substituted cycloalkyl$, $-NRC(O)alkenyl$, $-NRC(O)substituted alkenyl$, $-NRC(O)alkynyl$, $-NRC(O)substituted alkynyl$, $-NRC(O)aryl$, $-NRC(O)substituted aryl$, $-NRC(O)heteroaryl$, $-NRC(O)substituted heteroaryl$, $-NRC(O)heterocyclyl$, and $-NRC(O)substituted heterocyclyl$ where R is hydrogen or alkyl;

aryl refers to a monovalent aromatic carbocyclic group of from 6 to 14 carbon atoms having a single ring or multiple condensed rings, which condensed rings may or may not be aromatic;

substituted aryl refers to an aryl group that is substituted with from 1 to 3 substituents selected from the group consisting of hydroxy, acyl, acylamino, acyloxy, alkyl, substituted alkyl,

alkoxy, substituted alkoxy, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cycloalkoxy, substituted cycloalkoxy, carboxyl, carboxyl esters, cyano, thiol, thioalkyl, substituted thioalkyl, thioaryl, substituted thioaryl, thioheteroaryl, substituted thioheteroaryl, thiocycloalkyl, substituted thiocycloalkyl, thioheterocyclyl, substituted thioheterocyclyl, cycloalkyl, substituted cycloalkyl, halo, nitro, heteroaryl, substituted heteroaryl, heterocyclyl, substituted heterocyclyl, heteroaryloxy, substituted heteroaryloxy, heterocyclyloxy, and substituted heterocyclyloxy;

aryloxy refers to aryl-O-;

substituted aryloxy refers to (substituted aryl)-O-;

carboxyl refers to -COOH or a salt thereof;

carboxyl ester refers to a moiety selected from the group consisting of -C(O)O-alkyl, -C(O)O-substituted alkyl, -C(O)Oaryl, and -C(O)O-substituted aryl;

cycloalkyl refers to a cyclic alkyl group of from 3 to 10 carbon atoms having single or multiple cyclic rings;

substituted cycloalkyl refers to a cycloalkyl group having from 1 to 5 substituents selected from the group consisting of oxo (=O), thioxo (=S), alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl;

cycloalkoxy refers to a -O-cycloalkyl group;

substituted cycloalkoxy refers to a -O-(substituted cycloalkyl) group;

halogen refers to fluoro, chloro, bromo and iodo;

heteroaryl refers to an aromatic group of from 1 to 10 carbon atoms and 1 to 4 heteroatoms selected from the group consisting of oxygen, nitrogen and sulfur within a single ring or multiple condensed rings;

substituted heteroaryl refers to a heteroaryl group substituted with from 1 to 3 substituents selected the group consisting of hydroxy, acyl, acylamino, acyloxy, alkyl, substituted alkyl,

alkoxy, substituted alkoxy, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cycloalkoxy, substituted cycloalkoxy, carboxyl, carboxyl esters, cyano, thiol, thioalkyl, substituted thioalkyl, thioaryl, substituted thioaryl, thioheteroaryl, substituted thioheteroaryl, thiocycloalkyl, substituted thiocycloalkyl, thioheterocyclyl, substituted thioheterocyclyl, cycloalkyl, substituted cycloalkyl, halo, nitro, heteroaryl, substituted heteroaryl, heterocyclyl, substituted heterocyclyl, heteroaryloxy, substituted heteroaryloxy, heterocyclyloxy, and substituted heterocyclyloxy;

heteroaryloxy refers to –O-heteroaryl;

substituted heteroaryloxy refers to –O–(substituted heteroaryl);

heterocyclyl refers to a saturated or unsaturated group having a single ring or multiple condensed rings, from 1 to 10 carbon atoms and from 1 to 4 hetero atoms selected from the group consisting of nitrogen, sulfur or oxygen within the ring wherein, in fused ring systems, one or more of the rings can be cycloalkyl, aryl or heteroaryl provided that the point of attachment is through the heterocyclyl ring;

substituted heterocyclyl refers to a heterocycle group substituted with from 1 to 3 of the same substituents selected from the group consisting of oxo (=O), thioxo (=S), alkoxy, substituted alkoxy, acyl, acylamino, acyloxy, amino, substituted amino, aminoacyl, aryl, substituted aryl, aryloxy, substituted aryloxy, cyano, halogen, hydroxyl, nitro, carboxyl, carboxyl esters, cycloalkyl, substituted cycloalkyl, heteroaryl, substituted heteroaryl, heterocyclyl, and substituted heterocyclyl;

heterocyclyloxy refers to –O-heterocyclyl;

substituted heterocyclyloxy refers to –O–(substituted heterocyclyl);

phosphate refers to a moiety selected from the group consisting of –OP(O)(OH)₂

(monophosphate), –OP(O)(OH)OP(O)(OH)₂ (diphosphate) and –

OP(O)(OH)OP(O)(OH)OP(O)(OH)₂ (triphosphate) or salts thereof including partial salts thereof;

phosphonate refers to a moiety selected from the group consisting of $-\text{OP}(\text{O})(\text{R})(\text{OH})$, $-\text{OP}(\text{O})(\text{OR})$, and salts thereof including partial salts thereof, wherein each R is independently selected from hydrogen, alkyl, substituted alkyl, carboxylic acid, and carboxyl ester;

sulfonate ester refers to $-\text{SO}_2\text{OR}$ where R is selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclyl and substituted heterocyclyl;

thiol refers to $-\text{SH}$;

thioalkyl refers to $-\text{S-alkyl}$;

substituted thioalkyl refers to $-\text{S-}(\text{substituted alkyl})$;

thiocycloalkyl refers to $-\text{S-cycloalkyl}$;

substituted thiocycloalkyl refers to $-\text{S-}(\text{substituted cycloalkyl})$;

thioaryl refers to $-\text{S-aryl}$;

substituted thioaryl refers to $-\text{S-}(\text{substituted aryl})$;

thioheteroaryl refers to $-\text{S-heteroaryl}$;

substituted thioheteroaryl refers to $-\text{S-}(\text{substituted heteroaryl})$;

thioheterocyclyl refers to $-\text{S-heterocyclyl}$; and

substituted thioheterocyclyl refers to $-\text{S-}(\text{substituted heterocyclyl})$.

Claims 8-14 (Canceled)

15. (currently amended) The compound according to any one of claims ~~1-11~~ 4-6, wherein R^{14} is hydrogen and R^{13} is selected from the group consisting of alkyl and hydrogen.

16. (original) The compound according to claim 15, wherein R^{14} is hydrogen and R^{13} is selected from the group consisting of hydrogen, methyl, ethyl, and n-propyl.

17. (currently amended) The compound according to any one of claims ~~1-16~~, 4-7, wherein R is hydrogen and R^1 is selected from the group consisting of methyl, vinyl, allyl, acetylenyl, propargyl, and trifluoromethyl.

Claims 18-22 (Canceled)

23. (currently amended) The compound according to any one of claims 1, 3, 4, 6, and 7, 8, 10, 12, and 14, wherein W is selected from the group consisting of hydrogen, acyl or triphosphate.

24. (currently amended) The compound according to ~~any of claims 1, 4, 8, 10 and 12~~ claim 4, wherein W² and W³ are hydrogen or acyl.

25. (original) The compound according to claim 24, wherein W² is hydrogen or acyl and W³ is hydrogen.

26. (original) The compound according to claim 25, wherein W² is acyl.

27. (currently amended) The compound according to claim 26, wherein said acyl group is selected from the group consisting of acyl groups ~~are~~ derived from amino acids, trimethylacetyl, and acetyl.

Claims 28-29 (canceled)

30. (currently amended) A compound selected from the group consisting of:

- 9-(2'-C-methyl- β -D-ribofuranosyl)-6-hydroxylaminopurine;
- 9-(2'-C-methyl- β -D-ribofuranosyl)-6-methoxylaminopurine;
- 9-(2'-C-methyl- β -D-ribofuranosyl)-6-propoxylaminopurine;
- ~~7-(2'-C-methyl- β -D-ribofuranosyl)-4-hydroxylamino-pyrrolo[2,3-d]pyrimidine;~~
- ~~7-(2'-C-methyl- β -D-ribofuranosyl)-4-methoxylamino-pyrrolo[2,3-d]pyrimidine;~~
- ~~1-(2'-C-methyl- β -D-ribofuranosyl)-4-methoxylamino-pyrazolo[3,4-d]pyrimidine;~~
- ~~1-(2'-C-methyl- β -D-ribofuranosyl)-4-hydroxylamino-pyrazolo[3,4-d]pyrimidine;~~
- ~~7-(2'-C-methyl- β -D-ribofuranosyl)-5-chloro-4-hydroxylamino-pyrrolo[2,3-d]pyrimidine;~~
- ~~7-(2'-C-methyl- β -D-ribofuranosyl)-5-bromo-4-hydroxylamino-pyrrolo[2,3-d]pyrimidine;~~
- ~~7-(2'-C-methyl- β -D-ribofuranosyl)-5-methyl-4-hydroxylamino-pyrrolo[2,3-d]pyrimidine;~~

~~7-(2'-C-methyl-β-D-ribofuranosyl)-5-cyano-4-hydroxyl-amino-pyrrolo[2,3-d]pyrimidine;~~
~~7-(2'-C-methyl-β-D-ribofuranosyl)-4-hydroxylamino-pyrrolo[2,3-d]pyrimidine-5-~~
~~carboxylamide;~~
~~7-(2'-C-methyl-β-D-ribofuranosyl)-5-ethyl-4-hydroxylamino-pyrrolo[2,3-d]pyrimidine;~~
~~7-(2'-C-methyl-β-D-ribofuranosyl)-5-bromo-4-methoxylamino-pyrrolo[2,3-d]pyrimidine;~~
~~7-(2'-C-methyl-β-D-ribofuranosyl)-5-methyl-4-methoxylamino-pyrrolo[2,3-d]pyrimidine;~~
~~7-(2'-C-methyl-β-D-ribofuranosyl)-5-cyano-4-methoxylamino-pyrrolo[2,3-d]pyrimidine;~~
~~7-(2'-C-methyl-β-D-ribofuranosyl)-4-methoxylamino-pyrrolo[2,3-d]pyrimidine-5-~~
~~carboxylamide;~~
~~1-(2'-C-methyl-β-D-ribofuranosyl)-3-bromo-4-hydroxylamino-pyrazolo[3,4-d]pyrimidine;~~
~~1-(2'-C-methyl-β-D-ribofuranosyl)-3-methyl-4-hydroxylamino-pyrazolo[3,4-d]pyrimidine;~~
~~1-(2'-C-methyl-β-D-ribofuranosyl)-3-cyano-4-hydroxylamino-pyrazolo[3,4-d]pyrimidine;~~
~~1-(2'-C-methyl-β-D-ribofuranosyl)-4-methoxylamino-pyrazolo[3,4-d]pyrimidine-3-~~
~~carboxamide;~~
~~1-(2'-C-methyl-β-D-ribofuranosyl)-3-bromo-4-methoxylamino-pyrazolo[3,4-d]pyrimidine;~~
~~1-(2'-C-methyl-β-D-ribofuranosyl)-3-methyl-4-methoxylamino-pyrazolo[3,4-d]pyrimidine;~~
~~1-(2'-C-methyl-β-D-ribofuranosyl)-3-cyano-4-methoxylamino-pyrazolo[3,4-d]pyrimidine;~~
~~1-(2'-C-methyl-β-D-ribofuranosyl)-4-methoxylamino-pyrazolo[3,4-d]pyrimidine-3-~~
~~carboxamide;~~
~~9-(2'-C-methyl-β-D-ribofuranosyl)-6-(-S or R-)-hydroxylaminopurine;~~
~~9-(2'-C-methyl-5'-O-triphosphate-β-D-ribofuranosyl)-6-(-S or R-)-hydroxylaminopurine;~~
~~7-(β-D-ribofuranosyl)-4-hydroxylamino-pyrrolo[2,3-d]pyrimidine;~~
~~7-(2'-C-methyl-β-D-ribofuranosyl)-4-hydroxylamino-5-ethynyl-pyrrolo[2,3-d]pyrimidine;~~
~~7-(2'-C-methyl-β-D-ribofuranosyl)-4-hydroxylamino-5-ethenyl-pyrrolo[2,3-d]pyrimidine;~~
~~7-(2'-C-methyl-β-D-ribofuranosyl)-4-hydroxylamino-5-(1,3-oxazol-5-yl)-pyrrolo[2,3-~~
~~d]pyrimidine;~~
~~6-hydroxylamino-9-(2'-C-methyl-3',5-diphosphite-β-D-ribofuranosyl)purine;~~

9-(2'-C-methyl- β -D-ribofuranosyl)-6-[2-aminocarbonyl-(pyrrolidine-1-yl)]-purine;
9-(2'-C-methyl- β -D-ribofuranosyl)-6-(1,3,4,9-tetrahydro-beta-carbolin-2-yl)purine;
9-(2'-C-methyl- β -D-ribofuranosyl)-6-(piperidin-1-yl)purine;
9-(2'-C-trifluoromethyl- β -D-ribofuranosyl)-6-[2-aminocarbonyl-(pyrrolidine-1-yl)]-purine;
9-(2'-C-ethenyl- β -D-ribofuranosyl)-6-[2-aminocarbonyl-(pyrrolidine-1-yl)]-purine;
9-(2'-C-ethynyl- β -D-ribofuranosyl)-6-[2-aminocarbonyl-(pyrrolidine-1-yl)]-purine;
9-(2'-C-methyl- β -D-ribofuranosyl)-6-(azetidin-1-yl)purine;
9-(2'-C-methyl- β -D-ribofuranosyl)-6-(pyrrolidin-1-yl)purine;
9-(2'-C-methyl- β -D-ribofuranosyl)-6-(3,6-dihydro-2H-pyridin-1-yl)purine; and
9-(2'-C-methyl- β -D-ribofuranosyl)-6-(3,4-dihydro-1H-isoquinolin-2-yl)purine.

31. (currently amended) A pharmaceutical composition comprising a pharmaceutically acceptable diluent and a therapeutically effective amount of a compound or mixture of compounds according to any one of claims 1-30 4-7, 24-27 and 30.

32. (currently amended) A method for treating HCV in a mammal which method comprises administering to said mammal diagnosed with HCV or at risk of developing HCV a therapeutically effective amount of a compound or mixtures of one or more compounds according to any one of claims 1-30 4-7, 24-27 and 30.

33. (original) A method for treating HCV in a mammal which method comprises administering to said mammal diagnosed with HCV or at risk of developing HCV a therapeutically effective amount of a pharmaceutical composition according to claim 31.